

### Inventor Biographies

**Robert Fulton:** Robert Fulton (1765 – 1815) was a great American engineer and inventor who developed the first successful commercial steamboat, the North River Steamboat, later known as the Clermont. Robert Fulton traveled to Europe and made a name for himself mostly in France, but switching his allegiance back to Britain, he would also help in the war efforts against Napoleon Bonaparte. Robert Fulton was the first to design a submarine and a torpedo. By the time he returned to the United States he became involved in steam engines on boats and designed the first commercial passenger carrying vessel. His last forays in inventing would come in the way of a steam driven warship.

**Thomas Edison:** was an American inventor and businessman who developed many devices that greatly influenced life around the world. These include the phonograph, the motion picture camera, and a long-lasting, practical electric light bulb. He was a prolific inventor too - holding 1,093 US patents in his name, as well as many patents in the United Kingdom, France, and Germany.

**Richard Arkwright:** Arkwright is considered the father of the modern industrial factory system and his inventions were a foundation for the Industrial Revolution. In the 1760s, Arkwright invented a machine called **the spinning frame**, a device that could spin 128 threads at the same time. Compared to a person using a spinning wheel, Arkwright's invention was much more productive and created stronger thread. In the early 1770s, Arkwright built a mill. His spinning frame was large and needed some power source to create motion. At first, he tried using horses but that did not work, so he built a water mill. The motion of the water created energy to move the machine, now called the **water frame**, which spun the thread.

**Louis Pasteur:** Louis Pasteur is known as one of the most important scientists in history. His discoveries led to an understanding of microbes and diseases that has helped to save millions and millions of lives. He is known for:

- **Bacteria and Germ Theory:** During Pasteur's time, people believed that microbes such as bacteria appeared due to "spontaneous generation". They thought that the bacteria just appeared out of nowhere. Pasteur ran experiments to see if this was true. Through his experiments, he proved that germs (bacteria) were living things that came from other living things. This was a major discovery in the study of biology and earned Pasteur the nickname the "Father of Germ Theory".
- **Pasteurization:** Pasteur used his knowledge of germs to investigate how microbes (bacteria and molds) spoiled beverages (like milk and wine). He found that heating up the liquids would kill most of the microbes and allow the beverages to last longer and be safer to drink. This process is known as pasteurization and is still done on many foods.
- **Vaccinations:** He continued to investigate with diseases. He found that he could make a weak form of a disease that would cause people to become immune to the stronger form of the disease. He called this weak form a "vaccine". He first discovered this by working with cattle on the disease anthrax. The first vaccine he gave to a human was the rabies vaccine.

**George Stephenson:** George Stephenson (1781 - 1848) was a talented railway engineer and inventor of the early railway locomotive called the 'Rocket'. George Stephenson was a lowly born man who educated and taught himself mechanical engineering. Once he learned how to repair engines, it was the next logical step to see how they could be improved and so he did. Although George Stephenson was not responsible for the original locomotive engine his improvements certainly meant that his design would become the template of future designs over the following one hundred and fifty years.

**Richard Gatling:** Richard Gatling (1818 - 1903) was a prolific inventor during the American Civil War, whose name is remembered due to his invention of the "Gatling Gun". A highly self-motivating sort of person, he thrived on inventions that would help man in back breaking work. Some of his earliest work was around planning machines, which would revolutionize the agricultural industry. When he contracted smallpox, he became interested in medicine and attained an MD. On the eve of Civil War Richard Gatling began trying to make the gun a more improved weapon and came up with the Gatling gun.

**James Watt:** James Watt (1736 - 1819) was famous for improving the Newcomer Steam Engine with his Watt Steam Engine, which were fundamental to the Industrial Revolution. He was also responsible for developing the idea of horsepower and the 'watt', the SI unit of power, was also named for him. Although James Watt wished to begin business making musical instruments he ended up working for the University of Glasgow where he was asked to repair a model engine developed by Newcomer and although he made the repair, the engine still did not work effectively

**Eli Whitney:** Eli Whitney (1765 - 1825) was an American inventor who would become known for his creation of a cotton gin machine that separated the cotton from the seed and this enabled the more difficult variety of cotton to be mass produced and more profitable. Unfortunately, the down side to his invention, although key to the Industrial Revolution and served to reshape the economy of the southern states. However, what Eli Whitney had not foreseen was the strengthening of the financial underpinning of the slave trade in the United States.

**Cyrus McCormick:** Cyrus H. McCormick (1809-1884) was an industrialist and inventor of the first commercially successful reaper, a horse-drawn machine to harvest wheat. In 1847, he moved to Chicago and formed what eventually became known as the McCormick Harvesting Machine Company. By 1858, the company was the largest farm equipment manufacturer in the United States, with assets totaling more than \$1 million dollars. An extraordinary inventor with unparalleled business acumen, Cyrus McCormick will always be remembered for his contributions to the advancement and mechanization of agriculture.

**Edmund Cartwright:** Cartwright was an English clergyman and inventor of the power loom, one of the key steps in the modernization of textile manufacture. In 1784, Cartwright visited Richard Arkwright's cotton-spinning mills and was inspired to construct a similar machine for weaving. The first power loom, patented in 1785, was extremely crude but improvements were made in later versions. Eventually, his power loom was a success and he received national recognition for his invention.

**Samuel Crompton:** Crompton was a British inventor of the spinning mule, which permitted large-scale manufacture of high-quality thread and yarn. The defects he found in the Spinning Jenny inspired him to try to invent a better device. In 1779, he produced a machine that simultaneously drew out and gave the final twisting to the cotton fibers fed into it, reproducing mechanically the actions of hand spinning. Years later, in 1812, there were at least 360 mills using 4,600,000 mule spindles.

**Samuel F.B. Morse:** Samuel F.B. Morse was an accomplished painter before he invented the telegraph and changed the way the world communicated. While in Europe, Morse met the inventor Charles Thomas Jackson. The two men got into a discussion about how an electronic impulse could be carried along a wire for long distances. Morse immediately became intrigued and started work on a mechanical device that he believed would accomplish the task. In 1838, Morse developed the system of dots and dashes for sending signals that would eventually become known as Morse code.